Municipal Market Insight

June 2019

Portfolio Advisory Group – U.S. Fixed Income Strategies

What's inside

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As good as it gets?

The Federal Reserve casts a long shadow over the U.S. economy and financial markets, and Treasuries are often most directly impacted. However, there are always spillover effects into other markets, and investors frequently see the Fed's support as a green light to take on more risk with their investments. Confidence in the Fed persisted even as it raised short-term interest rates to 2.50% from 0%, and until last December the Fed wasn't tested until it hiked rates and delivered the message there were additional hikes to come. The potential for a more aggressive Fed with additional rate hikes raised the yellow caution flag for some investors and sent them seeking historically safe havens in U.S. Treasuries *and* municipal bonds.

That brings us to our current state, where, since the first of the year, 10-year benchmark muni and Treasury yields are lower by approximately 0.60%, and both sectors have returned over 4%. The question we most often hear is, "Is this as good as it gets?" Our answer: We think not, primarily because of the Fed and its significant change in gears over the course of 2019. In January and March, policymakers pivoted away from raising rates again this year, and we believe they will soon signal

U.S. Treasury rate forecasts (% as of May 10, 2019)

	2019				2020			
	Q1	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E
FF	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
2-yr	2.27	2.40	2.45	2.50	2.55	2.55	2.55	2.60
5-yr	2.23	2.40	2.50	2.60	2.70	2.75	2.75	2.85
10-yr	2.41	2.55	2.65	2.75	2.90	3.00	3.05	3.15
30-yr	2.81	2.95	3.00	3.10	3.20	3.40	3.50	3.65

Source - RBC Economics

Treasuries vs. municipals

	5-yr TSY	5-yr Muni	10-yr TSY	10-yr AAA Muni	30-yr TSY	30-yr AAA Muni
Beginning of month (5/1/19)	2.30%	1.63%	2.50%	1.85%	2.90%	2.53%
Mid-month (5/15/19)	2.15%	1.52%	2.37%	1.70%	2.82%	2.36%
End of month (5/31/19)	1.91%	1.42%	2.13%	1.65%	2.57%	2.32%

Source - Bloomberg (Treasury),
Thomson Reuters TM3 (Municipals)

Wealth Management

The muni rally that began in January continued unabated in May, marking the fifth consecutive month of positive returns.

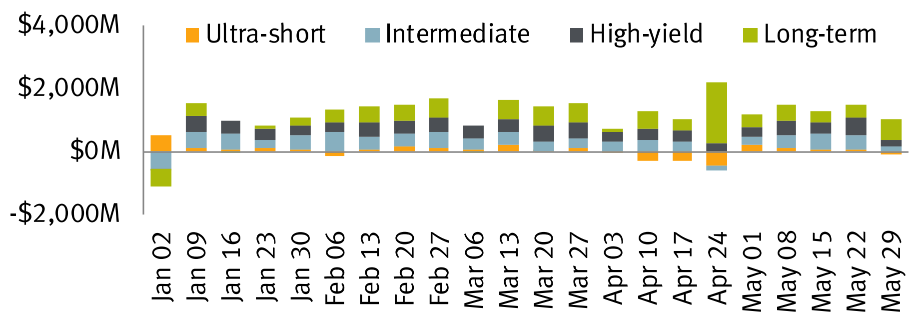
that one or two rate cuts are likely before 2019 draws to a close, which could exert further downward pressure on interest rates. Investing, or reinvesting for that matter, can prove challenging when rates are low but rather than subject portfolios to the cost of waiting, we recommend continuing to take advantage of select opportunities in the $3.9T muni market.

Market investment strategy & market commentary

Market performance – The rally continues! What next?

The muni rally that began in January continued unabated in May, marking the fifth consecutive month of positive returns, ahead of this summer's redemption windfall with demand set to outpace supply. Investors are prepared to receive approximately $151B in maturities, refunding, and redemptions over the next three months while state and local governments are preparing a scant $100B of issuance. Despite the $51B shortfall, summer redemptions do not necessarily translate into an extended rally. Over the past six years, there has been no correlation between summer redemptions and muni performance. Since 2013, there has only been one year (2016) in which the muni market has experienced a meaningful decline in the 10-year Municipal Market Data between June 1 and August 31, and only one year (2015) in which the muni/Treasury ratio fell by a meaningful measure. One possible scenario that could change recent history is strong demand driven by inflows to municipal bond funds that have experienced 21 consecutive weeks of inflows, with four-week average inflows topping $1.36B. Will inflows prove to be the catalyst that breaks recent historical trends?

2019 muni fund flows



Source - Lipper U.S. Fund Flows, RBC Wealth Management; weekly data through 4/24/19

Tax season and SALT cap fuel May demand and performance

May's rally came on the heels of the April 15 tax deadline, which left taxpayers in high income tax state's with larger tax liabilities. The Tax Cuts and Jobs Act of 2017 placed limits on federal deductions for state and local taxes (SALT). SALT limits were most felt in high tax states (California, Connecticut, New Jersey, and New York), all of which reported accelerated tax collections in April following last-minute filings by many taxpayers in those states.

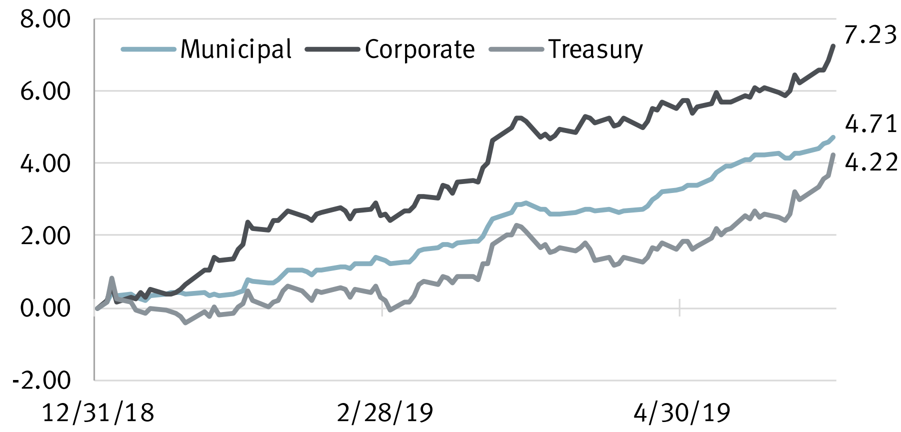
Will munis buck the trend in the June–August redemption season?

We think it is a good possibility amid strong demand from both retail and institutional investors despite recent muni market spread tightening. Municipal Market Data's 10-year and 30-year benchmark AAA munis ended May at 1.65% and 2.32%, respectively, higher than their record lows of 1.29% (10-year) and 1.93% (30-year), indicating the possibility of further spread tightening. During the month, 10-year and 30-year muni/Treasury ratios hit 20-year lows. The 10-year muni/Treasury ratio reached its 20-year low of 71.14% on May 11, 2019, while the 30-year muni/Treasury ratio dropped to its 20-year low of 83.60% three days later.

The cost of waiting – A strong performance but opportunity remains

Munis underperformed their Treasury counterparts, which rallied on investor flight to safety, marking the first month Treasuries outpaced munis, which returned 1.38% compared to Treasuries that returned 2.35%, according to the Bloomberg Barclays Municipal Index.

Bloomberg Barclays indexes



Source - Bloomberg; data range 12/31/18–5/31/19

Issuance, which is significantly trailing 10-year monthly averages, combined with strong investor demand continues as the catalyst driving this year's performance. Global events including trade war talk with China, growing tensions with Iran, and Venezuelan government unrest continue pushing investors to potential safe-haven options. As a result, munis are off to their best start since 2014, returning 4.71% YTD compared with the 4.22% Treasuries are returning. Munis have been unable to keep pace with this year's corporate rally which has the Bloomberg Barclays Corporate Bond Index returning 7.23% YTD.

While timing the market is often attempted, it is a risky undertaking, particularly when it comes to the bond market.

Among the many decisions facing investors, determining when to invest funds is one which frequently causes anxiety. While timing the market is often attempted, it is a risky undertaking, particularly when it comes to the bond market. Many investors delay their bond purchases because they think interest rates are going to rise. In the meantime, they keep funds in lower-yielding savings and money market accounts. What investors may not realize is that even if interest rates rise to a perceived acceptable level to finally take action, the higher yield may not offset the lower return received while they were waiting. It is difficult to make up this penalty imposed by the "cost of waiting."

This year's muni rally has pushed short-term yields to their lowest level in years pushing valuations higher. Investors could benefit from swapping out of their shorter-term holdings and extending out on the muni yield curve where the spread between 2yr and 30yr munis is 0.99%, which compares favorably to the 0.50% spread between the 2yr and 30yr Treasury.

This month's focus: PREPA offer to join restructuring agreement

Uninsured Puerto Rico Electric Power Authority (PREPA) bondholders were given the option to join the existing Restructuring Support Agreement (RSA) previously agreed upon by Assured Guaranty Corp. and several large ad hoc bondholders. Individual bondholders that own insured PREPA bonds were not eligible to join the RSA because the respective bond insurers have sole holder voting rights and will dictate the path of the insured bonds.

If the existing RSA is ultimately consummated, PREPA bondholders would exchange all outstanding bonds for two tranches of securitized bonds issued by a new bankruptcy-remote commonwealth subsidiary that would be backed solely by a non-bypassable, first priority, statutory lien on a Transition Charge. The Transition Charge would be a dedicated, capped electric surcharge that would incrementally increase based on a predefined schedule over the life of the bonds. Total revenues generated from the Transition Charge will depend on total electric consumption multiplied by the predefined surcharge rate.

PREPA bondholders would exchange their par outstanding plus a portion of unpaid interest for 1) 67.5% principal of tax-exempt bonds with a 5.25% current interest rate and a 40-year maturity (tranche A bonds), and 2) 10% of growth bonds that would mature in 47 years (tranche B bonds) and interest would be paid only when the tranche A bonds are fully retired. The tranche B interest rate would be 7% if deemed tax-exempt and 8.75% if deemed taxable. The tranche B bond accrued but unpaid interest would be paid as additional tranche B bonds until the tranche A bonds are retired, at which time the tranche B bonds would begin amortizing.

PREPA proposed debt restructuring terms

	Interest rate	Stated maturity	Expected maturity	Payment sunset	Exchange of par/interest outstanding
Tranche A	5.25%	40 years	33 years	no	67.5%
Tranche B	7% if tax-free 8.75% if taxable	47 years	unknown	yes	10.0%

Note: PREPA Restructuring Support Agreement

The tranche A bonds would have one stated maturity date 40 years from the issuance date, but would be subject to mandatory redemption from excess cash flow generated from the Transition Charge. The tranche B bonds would have one stated maturity date 47 years from the issuance date and would also be subject to mandatory redemption from excess cash flow. Tranche B bonds would only receive interest payments after full repayment of the tranche A bonds.

The commonwealth estimates the tranche A bonds would be retired within 33 years, but there is no sunset for repayment of the tranche A bonds. The Transition Charge would continue to be collected until the tranche A bonds are fully repaid. Conversely, even if amounts remained unpaid, the tranche B obligation would be canceled after the 47-year final maturity.

There will be no default on the bonds for failure to pay scheduled interest as long as the full amount collected under the Transition Charge is used to pay debt service.

Under the RSA, participants specifically agree not to place a receiver to oversee the electric utility's operations, which potentially exposes investors to continued mismanagement, although PREPA is seeking to privatize its operations.

Uninsured bondholders that signed on to the RSA will receive monthly payments commencing August 31, 2019.

Interim payments

Uninsured bondholders that signed on to the RSA will receive monthly payments commencing August 31, 2019, and an additional, to-be-determined payment at the conclusion of the Title III bankruptcy. The calculation of the monthly payments has variable inputs, including the amount of electric consumption and the amount of

PREPA debt tendered pursuant to this RSA. The monthly payment terminates under several scenarios including conclusion of the Title III bankruptcy.

PREPA bondholders that signed on to the RSA are restricted to trading their bonds only to other bondholders that also signed onto the agreement. This trading restriction may be lifted under various circumstances including conclusion of the Title III bankruptcy.

Information you can use

Uninsured PREPA bondholders that joined the RSA will begin receiving monthly payments in late August and have agreed to a potential 86% recovery value assuming the investor currently owns 5% interest PREPA bonds. (If the RSA is consummated, individual recovery values will vary based on the current interest rates of outstanding bonds because some unpaid interest will be factored into recovery values.) The proposed restructured tranche A and B bonds also have well-above market interest rates at 5.25% and 7%, respectively. However, the probability of repayment on the tranche B bond is less certain because repayment relies upon the electric utility achieving certain consumption targets. Unlike the repayment obligation on the tranche A bonds, which has no sunset, the obligation on the tranche B bond is canceled after the 47-year final maturity.

Territorial update

Puerto Rico – Island updates

Bondholders receive a reprieve

Following the completion of the restructuring of the island's $17.6B of sales-tax bonds (COFINA), investors received approximately $12B of various tranches of new sales tax bonds. Following the issuance of the new bonds, the tax-exempt status of nearly 30% of the newly issued bonds remained in question. In mid-May, the Internal Revenue Service (IRS) ruled that all the newly issued sales-tax bonds were tax-exempt. The IRS notification to COFINA said $3.59B of Series 2019 A2 bonds and the $45.57M of Series 2019 B2 bonds were exempt from taxes, much to the relief of bondholders.

Positive tax collection news

The commonwealth reported tax revenue is exceeding this year's budget projections by $920M through the end of April. The island, which has been in bankruptcy since 2017, is also recovering from the impact of Hurricane Maria, which brought severe devastation across the island in September 2017. The PROMESA board is expecting the island's economy to grow by 4% as it rebuilds for the current fiscal year ending June 30, 2019. The island experienced improved collections across all categories including corporate taxes, individual income taxes, and sales taxes.

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PROMESA board rejects governor's budget

The island's federal oversight board said it was rejecting Governor Ricardo Rosselló's budget and will submit a revised budget that shaves $570M from the governor's budget. The revised version does not set aside any funds for debt service but allocates $2B to the island's financially troubled pension system. The commonwealth is scheduled to begin making interest payments on some of the island's restructured bonds the next fiscal year.

PROMESA restructuring plan being prepared

The island's federal oversight board is preparing a debt readjustment plan for the island's approximately $17.8B of general obligation bonds and approximately $49B of pension and retiree benefits owed to current and future retirees. *Nueva Dia*, an island newspaper, reported the board has been in negotiations with bondholders and creditors and could release its plan of adjustment as early as the middle of June.

U.S. Virgin Islands – Governor's budget falls short

Governor Albert Bryan Jr.'s recently submitted 2020 budget comes up short of addressing the U.S. territory's "extremely large" pensions underfunding. The governor's budget sets aside $7M or 0.8% of his proposed $817.8M spending plan. As of March 2018, the Government Employees Retirement System is projecting it could run out of money in late 2020 or the early part of 2021, reporting the system's funded ratio of 27.7%. In 2018, Moody's reported the territory has not had a structurally balanced budget in over 10 years.

State news

California – Fitch comments on governor's revised budget

Fitch Ratings said Governor Gavin Newsome's budget revision for the fiscal year beginning July 1, 2019, to pay down liabilities and fund reserves, offers a reasonable and sound approach to maintain fiscal stability in the coming budget year. The governor's measures focus on sustainability of expanding programs while continuing to pay down long-term liabilities, and increasing funding to the state's rainy-day fund.

The Illinois House approved a constitutional amendment that would eliminate the flat income tax and implement a progressive tax.

Illinois – Lawmakers pave the way for progressive tax

The Illinois House approved a constitutional amendment that would eliminate the flat income tax and implement a progressive tax. The measure will go before voters for approval during the next presidential election. The progressive tax, which is the centerpiece of Governor J.B. Pritzker's plan to stabilize the state's finances, calls for tax increases on incomes higher than $250,000 annually. The governor expects the measure to raise more than $3B annually, while leaving rates unchanged for approximately 97% of the state's residents.

Illinois – Governor J.B. Pritzker pitches infrastructure

Governor J.B. Pritzker introduced his preliminary $41.5B infrastructure plan, named "Rebuild Illinois," during the middle of last month. The plan calls for the state to invest in large projects including roads, bridges, mass transit, and other large infrastructure projects. The governor's plan calls for 70% ($28.6B) of the funds to go toward transportation improvements, 11% to state facilities, 6% higher education, 8% kindergarten to 12th grade education, and 5% for other infrastructure. The governor plans to fund a portion of the plan by hiking the gas tax $0.19, which would become effective July 1, 2019. Pritzker also plans to increase vehicle registration fees and a state level ride-share tax to fund the infrastructure projects.

Kansas – Governor uses veto pen

No sooner had the Kansas Legislature passed a bill that would have returned $85M to taxpayers following the state's windfall from federal tax overhaul, Governor Laura Kelly vetoed the bill. The governor said the state would face a $1B deficit within three years, making it difficult for the state to pay its bills and invest in its people.

New Jersey – Tax windfall

The state reported April tax collections were well ahead of budget projections, leading state Treasurer Elizabeth Muoio to say the state is now projecting a combined $1B 2019 and 2020 budget surplus. The surge in April tax collections, a projected $377M more than budgeted, will enable New Jersey to allocate $250M to its rainy-day fund, which has carried a zero balance since 2008.

New York – Does not meet targeted pension return

New York State Comptroller Thomas P. Napoli reported the state's Common Retirement Fund returned just 5.23% for the fiscal year ended March 31, well below the fund's targeted 7.00% annualized return target. The 5.23% return was driven by a strong 9.9% return from private equity. Without the private-equity results, the retirement fund would have retuned approximately 4.57% for the year.

State receiving windfall tax collections

New York, like many other high income tax states, experienced a windfall in April. The state collected $11.6B, a $3.7B jump from the prior year, primarily driven by personal income taxes. New York's windfall follows increased tax collections in California, Illinois, Massachusetts, and New Jersey. The $11.6B is a positive for the state's FY2020 budget, coming in $60.4M ahead of budget.

Bank selloff of munis continues in 2019

Following tax reform in 2017, which reduced the corporate tax rate beginning in 2018, major U.S. banks began reducing their municipal holdings, selling approximately $74B in 2018. The selloff continued through the end of Q1 2019 with the largest U.S. banks selling approximately $5.6B, the largest drop since the Q2 2018, according to a report by the Securities and Exchange Commission. Despite the selloff, strong demand from other market participants has not had a negative impact on the overall muni market and individual bond pricing.

Migration beginning to have an impact

Bloomberg News recently reported roughly 5 million Americans annually relocate from one state to another. Among states facing the largest out-migration, Connecticut, Illinois, New Jersey, New York, and Pennsylvania were some of the states hit with the largest financial drains due to out-migration. Connecticut saw the largest decline, losing the equivalent of 1.6% of its annual adjusted gross income, with residents leaving the state having average incomes of $122,000, 26% higher than those of people moving to the state.

Florida, Idaho, Oregon, South Carolina, and Texas were among the states that benefited most from in-migration.

Florida, Idaho, Oregon, South Carolina, and Texas were among the states that benefited most from in-migration, with Florida posting the biggest gains at a nearly 3% annual adjusted gain increase.

Public pension funds falling short

State and local governments continued struggling to meet targeted investment returns through the first three quarters of 2018, averaging 3.25% for the aforementioned period. The 3.25% average return, which compares unfavorably to the average 7.3% assumed return for public funds, compounds the already sizable estimated $2T unfunded pension liabilities that exist nationwide.

State ratings roundup – A quiet month with no rating changes

Maine: Affirmed by S&P

The rating was affirmed on May 29 with a stable outlook. The rating affirmation was a result of the state's history of making mid-biennium budget adjustments when necessary, increases to the state rainy day fund, and low debt and modest pension liabilities. Offsetting the above-mentioned positive credit characteristics is the state's history of negative general fund balances in recent years.

Oregon: Affirmed by Moody's

On May 17, the Aa1 state rating was affirmed with a stable outlook. The rating affirmation was based on Oregon's "strong economic growth that is supporting positive financial performance." The state has exposure to personal income tax volatility, but experienced a 50% surge in April income taxes, as has been the case in many other high-tax states.

State/territory credit ratings

State/Territory	Fitch	Moody's
Alabama	AA+	Aa1
Alaska	AA	Aa3
Arizona	-----	Aa2
Arkansas	-----	Aa1
California	AA-	Aa3
Colorado	-----	Aa1
Connecticut	A+	A1
Delaware	AAA	Aaa
Florida	AAA	Aa1
Georgia	AAA	Aaa
Hawaii	AA	Aa1
Idaho	AA+	Aa1
Illinois	BBB	Baa3
Indiana	AAA	Aaa
Iowa	AAA	Aaa
Kansas	-----	Aa2
Kentucky	AA-	Aa3
Louisiana	AA-	Aa3
Maine	AA	Aa2
Maryland	AAA	Aaa
Massachusetts	AA+	Aa1
Michigan	AA	Aa1
Minnesota	AAA	Aa1
Mississippi	AA	Aa2
Missouri	AAA	Aaa
Montana	AA+	Aa1
Nebraska	-----	Aa1

State/Territory	Fitch	Moody's
Nevada	AA+	Aa2
New Hampshire	AA+	Aa1
New Jersey	A	A3
New Mexico	-----	Aa1
New York	AA+	Aa1
North Carolina	AAA	Aaa
North Dakota	-----	Aa1
Ohio	AA+	Aa1
Oklahoma	AA	Aa2
Oregon	AA+	Aa1
Pennsylvania	AA-	Aa3
Rhode Island	AA	Aa2
South Carolina	AAA	Aaa
South Dakota	AAA	Aaa
Tennessee	AAA	Aaa
Texas	AAA	Aaa
Utah	AAA	Aaa
Vermont	AAA	Aa1
Virginia	AAA	Aaa
Washington	AA+	Aa1
West Virginia	AA	Aa2
Wisconsin	AA+	Aa1
Wyoming	-----	-----
District of Columbia	AA+	Aaa
Guam	-----	-----
Puerto Rico	-----	Ca
Virgin Islands	-----	-----

Source - Fitch Ratings, Moody's Investors Service

Regional updates and other market news

Local issuer rating updates

Bergen County, NJ – Rating affirmed

On May 17, Moody's affirmed the county's Aaa rating and maintained a stable outlook. The affirmation was based on the county's large, wealthy tax base, strong finances, favorable location, and modest debt and pension burden.

Kansas City International Airport, MO – Downgraded by S&P

The May 24 downgrade occurred after the airport released its $1B capital expenditure program to renovate and expand the aging airport. The airport authority is planning to issue $875M of revenue bonds to commence its terminal-modernization plan.

Los Angeles' rating was affirmed, reflecting its strong economy, strong management, and adequate budgetary performance and slight operating surpluses.

Los Angeles, CA – Rating affirmed

On May 24, the city's rating was affirmed, reflecting its strong economy, strong management, and adequate budgetary performance and slight operating surpluses. The outlook remains stable. Los Angeles is the country's second-largest city behind New York and one of the largest economic engines in the country, which has enabled the city to improve its financial condition in recent years.

Residents living in the country's largest cities are becoming responsible for increasing debt burdens as population trends are declining.

Other municipal-related news

Court ruling reverberates throughout municipal market

An April court ruling by Puerto Rico bankruptcy Judge Laura Taylor Swain is reverberating throughout the municipal market. Judge Swain ruled that dedicated revenue may be—but are not required to be—paid while a municipality is in bankruptcy. Judge Swain ruled in favor of the commonwealth's taking of "pledged toll revenues" dedicated to bondholders during pendency of the commonwealth's bankruptcy. The ruling has been upheld by an appeals court.

In light of the court ruling, Moody's placed the ratings of eight bond issues totaling $13.8B on review for downgrade. The water systems of Chicago, Cleveland, and Dallas, are under review for downgrade. Other revenue bonds under review are Granite City, Illinois' wastewater treatment plant; the Lynn Water & Sewer Commission (Massachusetts); Sheffield, Alabama's electric system; the Center City District of Philadelphia; and Monroe County Water Authority (New York).

If not overturned, the ruling will be extremely disruptive to the municipal market because it runs counter to all other municipal bankruptcy rulings and arguably to the 1998 Congressional Amendment to the U.S. Bankruptcy Code.

Growing debt amid declining population

Residents living in the country's largest cities including Chicago, New York, Los Angeles, Philadelphia, San Jose, San Diego, Dallas, Houston, San Antonio, and Phoenix are becoming responsible for increasing debt burdens as population trends are declining. Chicago, Los Angeles, and New York are among the largest cities losing population. Chicago is among the hardest hit with its debt burden at $36,000, plus $68,310 in county obligations, per Illinois resident. In addition to each resident's share of the local debt burden, each resident's share of the state's tax burden is an additional $50,800. We think these trends, if they continue, could begin to limit future debt issuance amid mounting taxpayer debt burdens.

Perla, Arkansas – Bankruptcy filing

On May 26, the Arkansas city became the first to file for Chapter 9 bankruptcy protection. Perla, population of 245, filed as a result of ongoing litigation with neighboring Malvern. The town of Malvern claims Perla owes it more than $250,000 for water services, which Perla has failed to pay. The $250,000 is significantly larger than Perla's $94,507.38 2018 general funds budget.

Tobacco bonds – Time for a review

Tobacco stocks experienced significant valuation declines during May amid slumping sales and declining usage. The cigarette industry has been battling with a tough regulatory and legal environment where smokers are seeking alternatives to smoking cigarettes. The country's major tobacco manufacturers are expecting usage to decline 6% this year, well ahead of original 4%–5% decline expectations. Significant declines in cigarette sales and usage could adversely affect pricing on municipal issues backed by payments made as part of the Master Settlement Agreement signed between the major cigarette manufacturers and 49 states.

On May 13, S&P placed the ratings of 240 tobacco bonds secured by cash payments made under the 1998 settlement agreement between tobacco companies and state's attorney generals on review for downgrade. The National Association of Attorney's General, party to the original agreement, reported a 4.75% annual drop in domestic cigarette shipments in 2018. The original agreement was settled and is based on cigarette sales within the United States. Continued steep declines in sales could negatively impact the ability of the tobacco companies to adequately cover their payment commitments.

RBC Wealth Management retail trading (5/1/19 – 5/31/19)

Top 10 CUSIPs selling volume to retail customers

CUSIP	Description	Maturity	Coupon	Volume
73358WE26	PORT AUTH NY/NJ-198	11/15/2056	5.25	6,861
64577B4K7	NJ ECON DEV AUTH-REF	06/01/2037	5.00	5,019
179282FU7	CLACKAMAS CNTY OR SVC	12/01/2030	2.13	4,916
59261AYV3	MET TRANSPRTN-A1-AGM	11/15/2040	5.00	4,847
072024TY8	BAY AREA TOLL AUTH	10/01/2054	5.00	3,643
79625GBB8	SAN ANTONIO ELEC&GAS	02/01/2048	5.00	3,468
709224WR6	PA TURNPIKE-B1	06/01/2047	5.25	3,331
04184RBT6	ARLINGTON-SPL TAX-A	02/15/2048	5.00	2,667
167593M74	CHICAGO O'HARE ARPT-B	01/01/2053	4.00	2,541
072887W24	BAYONNE-REF-IMPT	07/01/2039	5.00	2,326

Top 10 CUSIPs buying volume from retail customers

CUSIP	Description	Maturity	Coupon	Volume
91412HDE0	UNIV OF CA -REF-O	05/15/2058	5.00	3,400
207758UG6	CONNECTICUT-A	08/01/2034	5.00	3,289
13063C5D8	CALIFORNIA	08/01/2046	5.00	3,040
2322655V6	CUYAHOGA CO HOSP	02/15/2057	5.50	2,930
010869HG3	ALAMEDA CORRIDOR-B	10/01/2035	5.00	2,803
13063DFS2	CALIFORNIA ST	10/01/2047	5.00	2,529
010869HJ7	ALAMEDA CORRIDOR-B	10/01/2037	5.00	2,312
13033LW52	CA HLTH FACS-A-SUTTER	08/15/2052	5.00	2,187
13063DAZ1	CALIFORNIA ST	11/01/2047	4.00	2,017
452152TC5	ILLINOIS ST	07/01/2038	5.50	1,935

Source - RBC Wealth Management

RBC Capital Markets institutional trading (5/1/19 – 5/31/19)

Top 10 CUSIPs selling volume to institutional customers

CUSIP	Description	Maturity	Coupon	Volume
91412HFG3	UNIV OF CALIFORNIA-BD	07/01/2029	3.35	61,489
61237WAE6	MONTEFIORE OBLIGATED GR	11/01/2048	5.25	44,900
64971XJH2	NYC TRANSTNL FIN-C3	11/01/2030	3.35	30,107
180848XJ7	CLARK CO-A	05/01/2048	5.00	29,020
64985HC47	NY ST ENVIRONMENTAL-A	08/15/2044	5.00	27,606
68608KNF1	OR ST-A-BRD HGR ED	08/01/2038	5.90	25,941
13063DGD4	CALIFORNIA-REF-TXBL	04/01/2033	4.50	25,265
13063DEE4	CALIFORNIA ST	08/01/2031	5.00	23,595
5446466U1	LOS ANGELES-B1	07/01/2037	5.00	21,662
64966MZX0	NEW YORK-F-1	04/01/2040	5.00	19,450

Top 10 CUSIPs buying volume from institutional customers

CUSIP	Description	Maturity	Coupon	Volume
91412HFG3	UNIV OF CALIFORNIA-BD	07/01/2029	3.35	38,859
180848XJ7	CLARK CO-A	05/01/2048	5.00	29,439
649845HH0	NY ENERGY-C-REMK	04/01/2034	2.63	25,961
68608KNF1	OR ST-A-BRD HGR ED	08/01/2038	5.90	25,875
13063DGD4	CALIFORNIA-REF-TXBL	04/01/2033	4.50	25,230
13063DEE4	CALIFORNIA ST	08/01/2031	5.00	24,353
646140DC4	NJ TURNPIKE AUTH-A	01/01/2048	4.00	23,916
5446466U1	LOS ANGELES-B1	07/01/2037	5.00	22,705
6500358D3	NY URBAN DEV-A	03/15/2044	5.00	22,436
452152S93	ILLINOIS ST	12/01/2030	5.25	21,140

Source - RBC Capital Markets

Bond Buyer indexes

Weekly	Current 5/30/19	Previous 5/23/19	2019 high	Date	2019 low	Date
Bond Buyer Revenue Bond Index	4.00%	4.05%	4.71%	(2/14)	4.00%	(5/30)
Bond Buyer 20-Bond Index	3.51%	3.56%	4.24%	(2/14)	3.51%	(5/30)
Bond Buyer 11-Bond Index	3.05%	3.10%	3.71%	(2/14)	3.05%	(5/30)

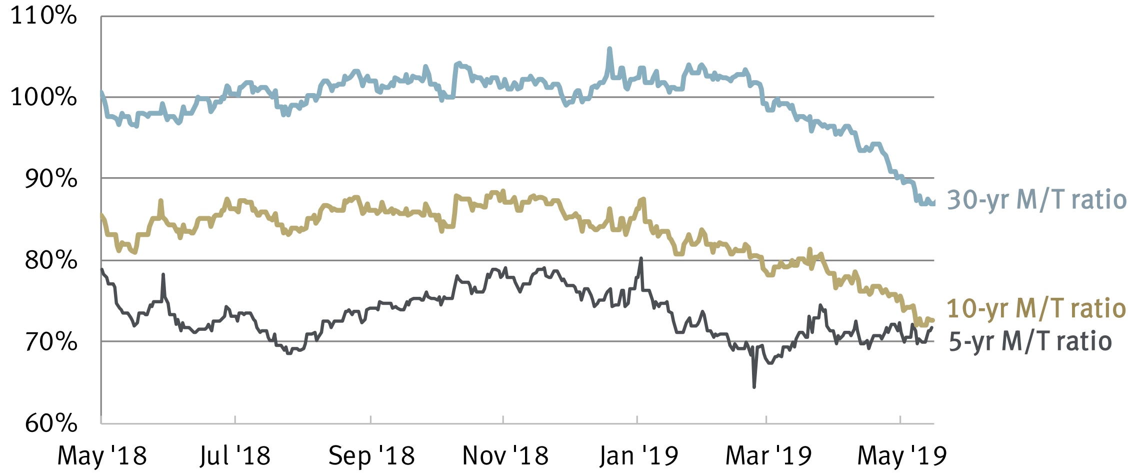
Source - *The Bond Buyer*

Barclays Municipal Index returns

	INDEX								
	1 Month	5 Year (4-6)	10 Year (8-12)	15 Year (12-17)	Long Bond (22+)	AAA	AA	A	BAA
Month-to-date total return	1.38%	1.08%	1.50%	1.58%	1.80%	1.20%	1.30%	1.46%	1.94%
Year-to-date total return	4.71%	3.23%	4.98%	5.57%	6.59%	4.18%	4.44%	5.10%	6.14%

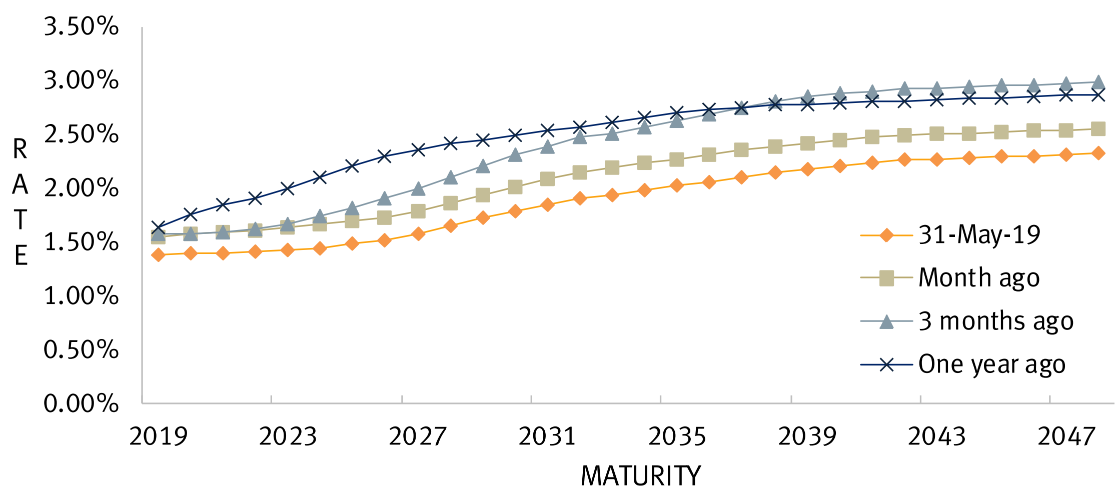
Source - Barclays; data through 5/31/19

Muni/Treasury ratio comparison



Source - RBC Wealth Management, Bloomberg; data through 5/31/19

Muni market data AAA yield curve



Source - RBC Wealth Management, Thomson Reuters TM3

Municipal bond insurers

Insurer	Moody's	Kroll Ratings
ACA	Not rated	Not rated
AMBAC	Not rated	Not rated
Assured Guaranty (AGC)	A3 (stable outlook)	AA (stable outlook)
Assured Guaranty Municipal Corp. (AGM)	A2 (stable outlook)	AA+ (stable outlook)
Berkshire Hathaway (BHAC)	Aa1 (stable outlook)	Not rated
Build America Mutual (BAM)	Not rated	Not rated
FGIC	Not rated	Not rated
Municipal Assurance Corporation	Not rated	AA+ (stable outlook)
National Public Finance (MBIA)	Baa2 (stable outlook)	Not rated
Syncora	Not rated	Not rated

Source - RBC Wealth Management; data through 5/31/19

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